



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/543,008	07/21/2005	Stefan Huber	112740-1085	2577
29177 7590 04/23/2008 BELI, BOYD & LLOYD, LLP P.O. BOX 1135 CHICAGO, IL 60690				
EXAMINER KARACSONY, ROBERT				
ART UNIT 2821		PAPER NUMBER		
MAIL DATE 04/23/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/543,008

**Applicant(s)**

HUBER ET AL.

**Examiner**

ROBERT KARACSONY

**Art Unit**

2821

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-21 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

### DETAILED ACTION

1. This Office Action is in response to amendments received January 15, 2008. Claims 12-22 are pending.

#### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 12 and 15-21 rejected under 35 U.S.C. 102(e) as being anticipated by *Tan et al.* (US 6,680,705, hereinafter *Tan*).

Claim 12: *Tan* teaches a multiband antenna array for a mobile radio equipment, comprising:

a planar patch antenna (201) having a plurality of resonances (col. 2/lines 50-52) and is further coupled to a ground connection (205) and to a high-frequency interface (203); and

a plurality of parasitic transmitters (801,601), wherein said transmitters are located marginal to the planar patch antenna (fig. 8) and are each embodied so as to be free of a high-frequency interface (fig. 8), wherein the parasitic transmitters are arranged as line-type conductor structures (fig. 8, Applicant does not disclose the meaning of “line-type conductor” in the Specification and the term “line-type conductor” is not well known in the art, therefore, examiner interprets “line-type conductor” as a conductor long in proportion to its breadth), whereas the structures of the planar patch antenna are arranged as sheet-type conductor structures (fig. 8).

Claim 15: *Tan* teaches at least one parasitic transmitter is free of connection to ground (fig. 8).

Claim 16: *Tan* teaches the plurality of parasitic transmitters are arranged on opposite sides of the planar patch antenna (fig. 8).

Claim 17: *Tan* teaches the plurality of parasitic transmitters are located on adjacent sides of the planar patch antenna. (fig. 8).

Claims 18-20: *Tan* teaches at least one parasitic transmitter extends at least partially over two, three and four adjacent sides of the planar patch antenna (fig. 8 illustrates '801' extending over a slit comprising 7 sides of the planar patch antenna).

Claim 21: the planar patch antenna and the parasitic transmitters are arranged in a plane (since both elements are planar they must inherently lie in a plane).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Tan* in view of *Pederson, Gert Frolund* (EP 1067627, hereinafter *Pederson*).

Claims 2 and 3: *Tan* teaches all of the limitations of claim 1, as discussed above. *Tan* fails to teach the plurality of parasitic transmitters are provided with a shared connection to ground. However, it is well known to one having ordinary skill in the art that parasitic radiators can be coupled to ground or not coupled to ground. *Pederson* teaches sharing the ground

connection to the parasitic radiators (fig. 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have connected the parasitic elements of *Tan* to ground as taught by Pederson, since it is well known in the art to ground parasitic elements.

***Allowable Subject Matter***

6. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 22 would be allowable because prior art fails to teach a multiband antenna array according to claim 12, wherein at least one parasitic transmitter has a spatial extension, emerging perpendicular out of the plane of the planar patch antenna.

***Response to Arguments***

7. Applicant's arguments filed January 15, 2008 have been fully considered but they are not persuasive.

8. Regarding the arguments on page 4, point 1 of the Remarks, Examiner respectfully disagrees with Applicant. The phrase "located marginal to the planar patch antenna" requires that the planar patch antenna be located "close to" the parasitic transmitter, which *Tan* teaches (see fig. 8). The two elements are adjacent one another.

9. Regarding the arguments on page 4, point 2 of the Remarks, Examiner respectfully disagrees with Applicant. Examiner has cited "fig. 8 of *Tan*" as teaching the parasitic transmitters free of a high-frequency interface. Fig. 8 of *Tan* clearly illustrates the secondary

elements 601, 801 not connected to the feed, which examiner interprets as free of a high-frequency interface.

10. Regarding the arguments on page 5, point 3 of the Remarks, Examiner respectfully disagrees with Applicant. Providing U.S. Patent No. 6,992,635, which discloses a "Microstrip Line Type Planar Array Antenna", does not make the term "line-type" well known in the art. A single instance of the term being used does not make a term "well known in the art". Also, examiner has interpreted "line-type" as "a conductor long in proportion to its breadth", which is similar to the antennas of U.S. Patent No. 6,992,635. Secondly, the method of forming the conductor is not required by the claimed invention. Thirdly, U.S. Patent No. 6,535,170 also discloses "line type" antenna elements (11L and 11H, fig. 1A, col. 6/lines 56-57), which examiner uses to interpret the term "line type".

#### ***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT KARACSONY whose telephone number is (571)270-1268. The examiner can normally be reached on M-F 7:30 am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on 571-272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. K./

Examiner, Art Unit 2821

/Douglas W Owens/  
Supervisory Patent Examiner, Art Unit 2821  
April 22, 2008